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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,118	09/10/1999	WILLIAM F. FOOTE	SUN1P250/P39	3725

22434 7590 03/16/2004

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EXAMINER	
VO, LILIAN	

ART UNIT	PAPER NUMBER
2127	17

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/394,118	FOOTE, WILLIAM F.
	Examiner	Art Unit
	Lilian Vo	2127

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38 - 72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *38 - 72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 38 – 72 are pending. Claims 1 – 37 have been cancelled.

Information Disclosure Statement

2. The information disclosure statement filed 2/17/04 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

Response to Arguments

3. Applicant's arguments with respect to claims 38 and 60 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 38 – 72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. **Claims 38, 41, 42, 45, 46, 50, 51, 52, 60 – 64, 66 and 67** recite the limitation "the particular resource" in lines 9, 2, 4, page 3, lines 2, 4, 1, 2, page 4, lines 1, 4, 2, page 5, lines 9, 2, 3, 5, 2, 4, 1, page 7, and lines 2, 5, 1, 2, 2, page 8, respectively. There is insufficient antecedent basis for this limitation in the claim.

7. **Claims 47 - 49, 65 and 68** recite the limitations "the particular resource" and "the amount" in lines 2 - 4, page 4, lines 2, page 5, lines 2, 3, page 8, and line 5, page 9, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 38 is rejected under 35 U.S.C. 102(e) as being anticipated by Seguchi et al. (US 6,633,898 B1, hereinafter Seguchi).

10. Regarding **claims 38 and 60**, Seguchi teaches a method for managing resource usage of code downloaded to a computer system (abstract), the method comprising:

for each code downloaded to the computer system, associating a resource indicator with all threads that are executed directly by the downloaded code and all threads that are initiated by the downloaded code, wherein all of the threads that are executed directly by the downloaded code and all threads that initiated by the downloaded code are defined as a set of related code (abstract, col. 23, lines 27 – 34, fig. 15, 18); and

updating the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (abstract, fig. 15 and 18).

11. Claims 38 and 60 are rejected under 35 U.S.C. 102(e) as being anticipated by Jarriel et al. (US 6,553,403 B1, hereinafter Jarriel).

12. Regarding **claims 38 and 60**, Jarriel teaches a method for managing resource usage of code downloaded to a computer system (abstract), the method comprising:

for each code downloaded to the computer system, associating a resource indicator with all threads that are executed directly by the downloaded code and all threads that are initiated by the downloaded code, wherein all of the threads that are executed directly by the downloaded code and all threads that initiated by the downloaded code are defined as a set of related code (abstract, col. 13, lines 33 - 41); and

updating the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (abstract, col. 13, lines 33 - 41).

13. Claims 38 and 60 are rejected under 35 U.S.C. 102(e) as being anticipated by Pogue et al. (US 6,112,240 B1, hereinafter Pogue).

14. Regarding **claims 38 and 60**, Pogue teaches a method for managing resource usage of code downloaded to a computer system (abstract), the method comprising:

for each code downloaded to the computer system, associating a resource indicator with all threads that are executed directly by the downloaded code and all threads that are initiated by the downloaded code, wherein all of the threads that are executed directly by the downloaded code and all threads that initiated by the downloaded code are defined as a set of related code (abstract, col. 2, lines 38 – 46, col. 12, line 1 – 24, 55 – col. 13, line 5, fig. 3); and

updating the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (abstract, col. 12, line 1 – 24, 55 – col. 13, line 5).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 38 – 46, 50 - 58, 60 – 63, 66 – 69 and 70 - 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert (U.S. Pat 5,838,968) in view of Judge et al (U.S. Pat. 6,430,570, hereafter referred to Judge).

17. Regarding **claims 38 and 60**, Culbert discloses a method for managing resource usage of a particular resource by a set of related code (fig. 4, codes executed as tasks), the method comprising:

associating a resource indicator (fig. 2, resource indicator 220, col. 6, line 51 – col. 7, line 2,) with the related code that indicates an amount of resource usage of the particular resource by the related code (col. 6, line 63 – col. 7, line 2, maximum number of allocable units, 230, and the currently allocated units 240, col. 3, lines 20 – 58, "...keeping track of actual system resource utilization through periodic measuring by updating the current task utilization record to reflect the consumption of the of the plurality of system resources, and by using this information to allocate or deallocate resources from tasks in order to satisfy system resource requests". In order for each task (includes threads initiation and execution) to perform its specific function, related code must be used to program each of the tasks. Hence, related code is considered inherently included in each of the task execution, which consume resources); and

updating (col. 7, lines 20 – 27, updates the usage value) the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (col. 11, lines 36 – 44, memory use increases).

Culbert however did not specify the tasks (related codes) are downloaded to the system. Nevertheless, Judge discloses of a Java application manager that responsible for resource management with downloading, execution and caching of multiple instances of the same application and/or of another application which request from the client (col. 3, lines 9 – col. 4, line 23, and col. 7, line 66 – col. 8, line 58).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made to incorporate this teaching from Judge to Culbert's invention so that resource usage from a particular source can be monitored for performance analysis.

18. Regarding **claim 39**, Culbert discloses a method as recited in claim 38 wherein the resource indicator's amount represents an absolute value of the resource usage (col. 7, lines 14 – 18, kilobytes needed for memory 100).

19. Regarding **claim 40**, Culbert further discloses a method as recited in claim 38 wherein the resource indicator's amount represents a proportional value of the resource usage (col. 7, lines 20 – 27, maintaining current information based on actual resource usage, col. 8, lines 42 – 46, updated with actual resource usage measurements).

20. Regarding **claim 41**, Culbert discloses a method as recited in claim 38 further comprising:

associating the related code with each resource portion of the particular resource that is allocated for the related code (abstract: The system and method manage an arbitrary set of system resources and globally optimize resource allocation across system tasks in a dynamic fashion, according to a system specified performance model. Resource allocated to system tasks, whose codes are executed. See also col. 5, lines 31 – 36, col. 6, line 59 – col. 7, line 13, resource manager controls resource allocation, and col. 3, lines 46 - 54); and

disassociating the related code with each resource portion of the particular resource that is deallocated for the related code (col. 3, lines 45 – 54, deallocate resources from tasks in order to satisfy system resource requests),

wherein the resource indicator is increased when a resource portion is allocated (col. 6, line 65 – col. 7, line 2, resource indicator showing the currently allocated unit) for the related code.

As per the feature wherein the resource indicator is decreased when a resource portion is deallocated and increased when a resource portion is allocated for the related code, as mentioned above, since the resource indicator shows the current allocated units or an index, it inherently indicates the resource allocation, whether increased or decreased, as claimed.

21. Regarding **claim 42**, Culbert did not clearly disclose the step of allocating the resource when resource indicator is below a maximum predetermined threshold and indicating an error

and not allocating the resource when the resource indicator is above the maximum predetermined threshold.

Nevertheless, Judge discloses of indicating an error when applications try to execute in low or no-memory situations (col. 7, line 66 – col. 8, line 36). As resource allocation requests cannot be immediately satisfied, it is considered obvious to one of ordinary skill in the art that resource is limited and hence having a maximum amount. Furthermore, as resource has been exhaustively allocated, OutOfMemoryError error is generated. This can be understood as indicating an error and not allocating the particular resource, as claimed in claim 42. As a result, it is also considered obvious to one of ordinary skill in the art, to realize the feature in which, OutOfMemoryError would not exist as memory allocation request can be immediately satisfied, hence implying that allocating the particular resource to the related code is an obvious fact when the resource indicator is below a maximum predetermined threshold.

It is considered obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that resource can be better managed for efficiency purposes.

22. Regarding **claim 43**, see citation above in claim 42 regarding OutOfMemoryError exception.

23. Regarding **claim 44**, Culbert did not teach the related code is disassociated through a garbage collection procedure. Nevertheless, Judge discloses the garbage collector reclaiming the memory (col. 7, line 66 – col.8, line 19, lines 43 – 52 and col. 9, lines 41 – 51).

It would have been obvious for one having an ordinary skill in the art, at the time the invention was made to incorporate this feature to Culbert's invention so that the additional allocation request can be satisfied.

24. Regarding **claims 45 and 56**, the examiner takes an Official Notice that the particular resource is selected from a group consisting a memory usage, open file usage, open socket usage, and monitor usage are considered well-known in the art. It would be obvious for one of ordinary skill in the art to consider including memory usage, open file usage, open socket usage, and monitor usage as the resources so that additional resources can be available for use in the computing environment.

25. Regarding **claim 46**, Culbert further teaches a method as recited in claim 45 wherein the resource indicator indicates a percentage of the particular resource that is utilized by the related code (col. 8, lines 3 – 18, 1% CPU utilization).

26. Regarding **claim 50,** Culbert further teaches a method as recited in claim 38 wherein the particular resource is CPU usage or network usage (col. 8, lines 11 – 18, CPU consumption is resource usage).

27. Regarding **claim 51**, Culbert further teaches a method which associates a threshold with a particular resource and the related code (fig. 2, resource master list, resource indicator, and max units, all of which means resource indicator with max units for each resource).

However, Culbert didn't clearly show the step of indicating that the related code's priority for CPU usage is decreased when the amount of resource usage of the particular resource by the related code exceeds the threshold. Instead, Culbert shows that when the resource is constrained and tasks have difficulty accessing the needed resource, the resource manager must decide whether to lower the available resources for current tasks or fail the task allocation request (col. 9, lines 15 – 20). This obviates the claimed feature in which code's priority for usage is decreased when the resource is not available (exceeds the threshold).

28. Regarding **claim 52**, Culbert further teaches a method which associates a second threshold with a particular resource and the related code (col. 8, lines 1 – 18: minimum resource utilization configuration, col. 3, lines 46 – 54 and line 66 – col. 4, line 3).

However, Culbert didn't clearly show the step of indicating that the related code's priority for CPU usage is boosted when the amount of resource usage of the particular resource by the related code drops below the second threshold. Instead, Culbert shows that a minimum resource utilization specification level for the tasks need to be maintained (col. 8, lines 5 – 9). This obviates the claimed feature in which code's priority for usage be boosted when the

resource utilization is below the minimum specification (below the threshold) to avoid task termination and to optimize system performance.

29. Regarding **claim 53**, Culbert did not teach the related code configured to be executed on behalf of an applet in the form of threads. Nevertheless, Judge discloses of related code executes in the form of threads (the application object creates a new thread: col. 12, lines 16 – 40 and 7) and the applications can be executed within a Java-enabled Web browser with embedded Java applet (Java applet: col. 3, lines 22 – 37).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made to implement Culbert's related code with the embedded Java applet to take advantage of the object linking and embedding feature.

30. Regarding **claim 54**, Culbert discloses a method for managing resource usage of a particular resource by a set of related code (fig. 4, codes executed as tasks), the method comprising:

associating a resource indicator (fig. 2, resource indicator 220, col. 6, line 63 – col. 7, line 2,) with the related code (resource manager 170, col. 6, lines 51 – 58) that indicates an amount of resource usage of the particular resource by the related code (col. 6, line 63 – col. 7, line 2, maximum number of allocable units, 230, and the currently allocated units 240); and

updating (col. 7, lines 20 – 27, updates the usage value) the resource indicator when the related code increases or decreases it collective resource usage of the particular resource (col. 11, lines 36 – 44, memory use increases).

31. Regarding **claim 55**, Culbert further teaches the resource include memory usage and CPU usage (col. 7, lines 2 – 6). However, Culbert did not clearly mention the network usage as further limited as claimed. Nonetheless, the reference of Judge readily disclose of a network computer system (figs 1 and 2, and col. 2, lines 29 – 42, col. 3, line 16 – col. 4, line 9).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that it can be operated in the network environment.

32. Regarding claims **57 and 70**, Culbert did not teach the additional limitations as claimed. Nevertheless, Judge teaches that threads defined as the set of related code based on which threads are assigned to a same protection domain (fig. 3, 7 and 8).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that resource usage from a particular resource can be monitored for performance analysis.

33. Regarding claims **58 and 71**, Culbert did not teach the additional limitations as claimed. Nevertheless, Judge teaches of indicating an error when applications try to execute in low or no-memory situations (col. 7, line 66 – col. 8, line 36, fig. 9). As resource allocation requests cannot be immediately satisfied, it is considered obvious to one of ordinary skill in the art that resource is limited and have reached the maximum amount.

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, to incorporate this feature to Culbert's invention so that resource usage can be managed more efficiently.

34. **Claims 61 – 63 and 66 -69** are rejected on the same ground as stated above.

35. Claims 47 - 49 and 64 – 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert (U.S. Pat 5,838,968) in view of Judge et al (U.S. Pat. 6,430,570, hereinafter Judge) as applied to claims 38, 45 and 60, 63 above, further in view of Mayle et al. (U.S. Pat. 6,182,022, hereinafter Mayle).

36. Regarding **claim 47**, although Culbert and Judge disclose a method as recited in claim 45, they did not clearly teach of the additional limitation as claimed. Nevertheless Mayle teaches the step of:

associating a plurality of thresholds with a the particular resource and the related code (col. 3, lines 7 – 11, current normal threshold curve, service level maximum threshold, and minimum threshold. Col. 8, lines 20 – 25, percent system utilization being monitor); and

notifying a registered resource callback when the amount of resource usage of the particular resource by the related code exceeds a first one of the thresholds (col. 4, lines16 – 19, receive an event notification when an attribute exceeds its corresponding current normal threshold, col. 4, lines 36 – 52, , current normal threshold 304 is recalculated periodically. Fig. 3, collected metric 308 exceeds current metric threshold 304 during T1 period).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, to incorporate these features to Culbert and Judge's invention so that system administrator is able to identify those periods of time when the collected metric for a particular attribute (resource) is outside the boundary of the particular attribute current normal operating range (col. 4, lines 40 – 44).

37. Regarding **claim 48**, although Culbert and Judge disclose a method as recited in claim 47, they didn't clearly teach of the additional limitation as claimed. Nevertheless, the reference of Mayle further teaches the step of:

notifying a registered resource callback when the amount of resource usage of the particular resource by the related code drops below a second one of the thresholds that has a different value than the first threshold (col. 4, lines16 – 19, receive an event notification when an

attribute falls short of its corresponding current normal threshold, col. 4, lines 36 – 52, current normal threshold 304 is recalculated periodically. Fig. 3, collected metric 326 drops below current metric threshold 304 during time T3 period which has a different value than the first threshold during T1 period).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, incorporate this feature to Culbert and Judge's invention so that system administrator is able to identify those periods of time when the collected metric for a particular attribute (resource) is outside the boundary of the particular attribute current normal operating range (col. 4, lines 40 – 44).

38. Regarding **claim 49**, although Culbert and Judge disclose a method as recited in claim 38, they didn't clearly teach of the additional limitation as claimed. Nevertheless, the reference of Mayle teaches the step of:

notifying a registered resource callback when the amount of resource usage of the particular resource by the related code drops below the first threshold (receive an event notification when an attribute falls short of its corresponding current normal threshold, col. 4, lines16 – 19, current normal threshold 304 is recalculated periodically, col. 4, lines 36 – 52, fig. 3, collected metric 309 drops below current metric threshold 304 during time T1 period).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, incorporate this feature to Culbert and Judge's invention so that system administrator is able to identify those periods of time when the collected metric for a particular attribute (resource) is outside the boundary of the particular attribute current normal operating range (col. 4, lines 40 – 44).

39. **Claims 64 – 65** are rejected on the same ground as stated above.

40. Claims 59 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert (U.S. Pat 5,838,968) in view of Judge et al (U.S. Pat. 6,430,570, hereinafter Judge) as applied to claims 38 and 60 above, further in view of Applicant's admitted prior art.

41. Regarding **claims 59 and 72**, although Culbert and Judge teach a method as recited in claim 38, they didn't clearly teach of the additional limitation as claimed. Nevertheless, applicant's admitted prior art teach of an integrated system with a set top box or a navigational system (specification page 1, 3rd - 4th paragraph).

It would have been obvious for one of ordinary skill in the art, at the time the invention was made, to combine with Culbert and Judge's invention so that resource can be better managed for efficiency purposes.

Conclusion

42. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

43. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 703-305-7864. The examiner can normally be reached on Monday - Thursday, 7:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 703-305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo
Examiner
Art Unit 2127

lv
March 10, 2004

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